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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,952	07/25/2003	David R. Arnold	1096	3212
23518	7590	02/03/2006	EXAMINER	
KEY SAFETY SYSTEMS, INC. PATENT DEPARTMENT 7000 NINETEEN MILE ROAD STERLING HEIGHTS, MI 48314			ILAN, RUTH	
			ART UNIT	PAPER NUMBER
			3616	

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,952	ARNOLD, DAVID R.	
	Examiner	Art Unit	
	Ruth Ilan	3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11, 13-23 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 13-23 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 13 is objected to because of the following informalities: In claim 13, line 5, "stand" should be "strand". Appropriate correction is required.
2. Claims 16-23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 16-22 are method claims that depend from an apparatus claim and as such the apparatus limitations are considered to be part of the preamble. During examination, statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, e.g., *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963.) The method of claim 16 does not manipulate any of the structure of claim 1, and as such claim 16 is in a sense broader. It is possible to infringe on claim 16 without infringing on claim 1, and as such claim 16 is an improper dependent claim.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

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of the following is required: Claim 1 recites the limitation “without the need of pressurizing the fill material”. There is no antecedent basis for this claim language.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11, 20, and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 20 recites that the step of impregnating the cable includes spraying the liquid material. However this claim depends from claim 16, which recites dipping a portion of the wire strand into a liquid. There is not an embodiment disclosed that includes both dipping and spraying, and as such there is not support in the specification for the claimed subject matter. Regarding claims 11 and 26, these claims include a solder “pliable within a temperature range of – 40 degrees F and 120 degrees F.” While the applicant has amended the specification to include the language in paragraph [0031] “the solder (or resin or epoxy) used should be pliable within a temperature range of –40 degrees F and 120 degrees F”, the applicant

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has not provided any examples that meet these generic design criteria. It is not known what solder is pliable at -40 degrees F.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4, 6, 11 and 16-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of claim 4 is unclear because it claims that the energy needed to bend the cable "varies with the thickness, resin or alloy" of the fill material. This claim is problematic for two reasons. First of all, "the...resin or alloy" lacks antecedent basis. The material has not previously been described in the claims as having a resin or alloy. Second of all, the claim appears to be claiming a transient state, or a design process, because of the use of the term "varies". This is an apparatus claim, and as disclosed, the stiffness of a particular cable does not vary once the cable is constructed. Claim 6 recites an alloy comprising molten: lead, tin, silver, bismuth, copper, antimony, selenium..." which as grammatically constructed appears to require that the alloy including all of these elements. The Examiner suggests inserting "or" before selenium in the list. Claim 11 is problematic because the "stiffening means for increasing the stiffness of a selected portion of the cable above the initial measurable stiffness" implies that the stiffness varies after the cable is constructed. That is that there is an initial stiffness, and then the stiffness increases. Further regarding claims 11 and 26, the phrase "via capillary" should be "via capillary action". Finally, the use of the term capillary in this claim is unclear. Where applicant acts as his

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or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term “capillary action” in claims 11, 16, and 26 appears to be used by the claim to mean “spreads between the spaces in the wires, ” at least based on the disclosure, and is used in the specification (see paragraph [0029] to describe coating the material and allowing it to be drawn between the wires. There is no disclosure of dimensions that indicate that capillary action is what is used to draw the liquid between the wires, it is likely that the liquid flows between the wires. The generally accepted meaning is “**Capillary action or capillarity** is the ability of a narrow tube to draw a liquid upwards against the force of gravity. It occurs when the adhesive intermolecular forces between the liquid and a solid are stronger than the cohesive intermolecular forces within the liquid. The effect causes a concave meniscus to form where the liquid is in contact with a vertical surface. The same effect is what causes porous materials to soak up liquids.” In the case of the instant application, the wire strand is immersed, and as such, the liquid probably flows into the spaces between the wires. Further regarding claims 16-23, these claims are replete with errors. In claim 16, line 3 recites “providing a length of wire strand”. However claim 1 has already recited “at least one single strand of wires” and as such it is unclear if the wire strand recited in claim 16 is an additional wire strand or the wire strand of claim 1. Claim 16, line 5 recites dipping a portion of the wire strand,

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and claim 1 has already recited, in line 11, that the strand is dipped, which appears to imply that the wire strand is dipped twice. For the purposes of examination, it will be assumed that the each of the recitations is intended to be the first recitation. Claims 19 and 20 recite "wherein the step of impregnating the cable includes..." This claim is problematic because as amended, claim 16, from which claims 19 and 20 depend, does not include an impregnating step. Claim 21 recites "...prior to the step of impregnating." Claim 23 includes "...prior to impregnating". As previously discussed, claim 16 does not include a "step of impregnating". Claim 26 recites "the stiffening means". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. As best understood, Claims 16-19 and 21-23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Baihle (US 2,561,487.) Additionally, the Examiner notes that applicant has not traversed the examiner's assertion of official notice that the method steps are old and well known as presented in the previous office action, and as such the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1, 3-11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wier '140 (US 5,897,140) in view of Riggs (US 3,318,082.) Wier '140 teaches a seat belt system including a flexible composite cable that extends between a pretensioner (12) and a buckle (18.) The cable includes at least one strand of wires (see Figure 2, and Figure 1, which shows a schematic for a twisted cable (16).) The cable is "saturated" (i.e. impregnated) with a plastic coating material 46, (see col. 4, lines 4-13) which inherently increases the stiffness of the cable. The curable coating material is considered to be solder, as broadly claimed. Wier teaches in col. 4, lines 4-13 that the cable is saturated, and as such will inherently include some degree of intra-wire filling. Wier does not however specifically disclose the fill material being between the intra-wire spaces. Riggs teaches that it is useful with a twisted cable to impregnate the cable with plastic to the extent that the intra-wire and intra-strand spaces are filled. This level of impregnation minimizes between wire abrasion, and increases the life of the cable (see col. 1, lines 21-24.) It would have been obvious to one having ordinary skill in the art at the time of the invention to impregnate the cable of Wier to the extent taught by Riggs, in order to avoid between wire abrasion, and to increase the life of the cable. Regarding the process limitations in claim 1, " wherein the at least one strand is dipped in a liquid form of the fill material which flows in the intra-wire spaces without the need of pressurizing the fill material, the fill material later in time hardens to form the composite

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cable assembly". These limitations are process limitations which do not structurally distinguish over the prior art, as such they have not been given any patentable weight. Regarding claims 11 and 26, Weir is silent regarding the pliability of the resin in the claimed range. It is noted that that Applicant has not disclosed any particular material that is pliable within the claimed range. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. It would have been obvious to one having ordinary skill in the art at the time of the invention to select a fill material with pliability within the claimed range, since such a temperature range is the environment expected in an automobile.

12. Claims 2 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wier '140 (US 5,897,140) in view of Riggs (US 3,318,082) and further in view of Weir '615 (US 6,095,615) and Sachs et al. (US 2005/0017567.) Wier '140 in view of Riggs is discussed above, and fails to teach a curved cable guide around which the cable extends, with the coating material increasing the stiffness of the cable and deforming as it passes into the cable guide. Wier '615 teaches a seat belt system comprising a cable 11 extending between a pretensioner 3 and a buckle 13. The cable 11 extends around a curved guide 27. A tubular metal body 9 increases the stiffness in an area of the cable remote from the housing and deforms as it passes into the curved guide 27 (see col. 3, lines 13-52.) Sachs et al. teaches a seat belt strap 12 whose stiffness is increased by impregnating the strap with a rubber or plastic material (see paragraph 48.) In another embodiment the strap 12 is replaced by a cable 52 (see

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paragraphs 52-53.) From these teachings of Weir '615 and Sachs et al., it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Wier '140 by providing a curved cable guide around which the cable extends, with the coating material increasing the stiffness of cable and deforming it as it passes into the cable guide, because this enables the buckle to be properly positioned relative to an occupant and also allows for energy dissipation during operation of the pretensioner.

Response to Arguments

13. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth Ilan whose telephone number is 571-272-6673. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

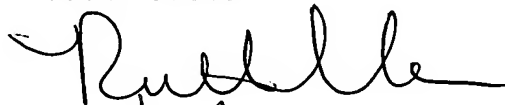
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ruth Ilan

Primary Examiner

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